

RECORDS OF OWLFLIES (NEUROPTERA: ASCALAPHIDAE) FROM MISSISSIPPI, WITH A KEY TO SPECIES¹

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ABSTRACT: Mississippi records are presented for three species of owlflies (Neuroptera: Ascalaphidae): *Neuroptynx appendiculatus*, *Ululodes macleayanus*, and *Ululodes quadrimaculatus*. Comments on collecting and distribution within the state are provided along with a key for separation of the species.

Owlflies (Neuroptera: Ascalaphidae) are relatively large neuropterans that superficially resemble dragonflies. The long, clubbed antennae and densely pubescent head and thorax separate adults from the odonates, as well as from other North American Neuroptera. The Nearctic species are normally crepuscular and individuals are most often collected at various types of light traps. As a group, they cannot be considered common in Mississippi. We are aware of only one published record from this state, *Ululodes macleayanus* (Guilding) (as *Ululodes hageni* Weele) from Horn Island, Jackson County, by Richmond (1968).

Two genera of Ascalaphidae occur in America north of Mexico (Penny, 1981), and both are represented in the Mississippi fauna; however, for a variety of reasons, the species of Ascalaphidae have long been in a state of taxonomic confusion. Recently, Shetlar (1977) studied the Nearctic species and attempted to stabilize their nomenclature. Unfortunately, his work has not been published. The following key, adapted from Shetlar (1977), will separate the three species of owlflies occurring in Mississippi.

Specimens examined during this study are primarily housed in the Mississippi Entomological Museum (MEM) at Mississippi State University, and in the insect collection at the University of Mississippi (UM). Additional specimens were provided by Bill Stark (BS), Mississippi College. Bryant Mather (BM), Clinton, kindly provided owlfly records from his collection (O.S. Flint, Jr. determinations). Shetlar (1977) examined a few Mississippi specimens from the collections at Cornell University (CU), Purdue University (PU), University of Kentucky (UK), and the U.S. National Museum (USNM). These records are included herein and are indicated by the appropriate collection abbreviations given above.

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Key to the Mississippi Species of Ascalaphidae

1. Eyes entire, not divided by a transverse sulcus (Fig. 1); wings petiolate, forewing with appendiculate projection on posterior margin near base (Fig. 2); hind wing never incised in anal area; forewing length 32-44mm*Neuroptynx appendiculatus* (Fabricius)
- 1' Eyes divided by a transverse sulcus (Fig. 3); wings not appendiculate; forewing length 25-33mm.....2
2. Both pairs of wings with the pterostigmas, or at least the veinlets of the stigmas, dark brown to black; hind wings never notched in posterior basal region (Fig. 4). forewing length 25-28mm*Ululodes macleayanus* (GUILDING)
- 2' Pterostigmas white or cream colored; hind wings of males with a wide notch at the posterior basal region (Fig. 5), hind wings of female not notched, but often maculate (fig. 6); forewing length 28-33mm.....*Ululodes quadrimaculatus* (Say)

Neuroptynx appendiculatus (Fabricius, 1793: 96)

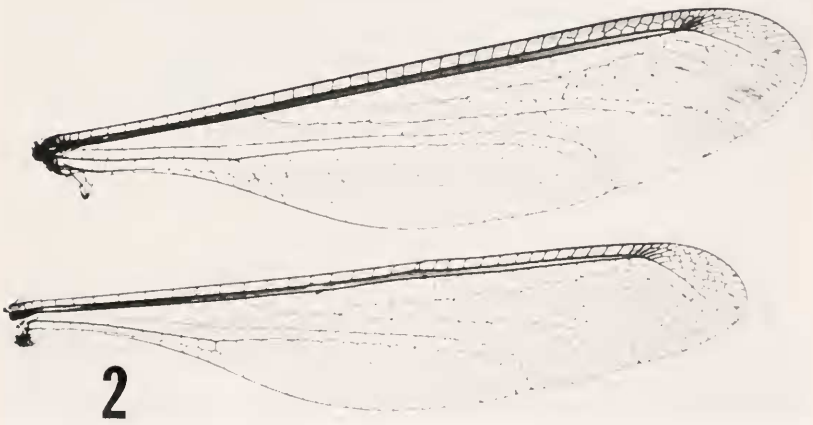
(Figs. 1, 2)

The generic name used for this species has been subject to some confusion (Shetlar, 1977), both *Ascaloptynx* Banks (1915) and *Neuroptynx* McClendon (1906) appearing in recent literature. Shetlar (1977) discussed the problem in some detail and concluded that *Neuroptynx* was the oldest available name, and considered it the valid name for the genus.

This is the largest species of owl fly in Mississippi. Though collection sites are scattered throughout the state, records are lacking from several large areas. We have no records from the Yazoo Delta, the east-central region, or the south western counties, and this is probably due to the lack of specific collecting activity. Specimens are apparently not attracted to light. The only collecting notes we have for this species are for specimens flushed from resting places during daylight hours and caught with a standard insect net. Resting places were typically bare stems of tall weeds and shrubs in wooded areas.

Mississippi Records

FORREST CO., 2 mi S McLaurin, 28 May 1987, P.K. Lago, (UM). GREENE CO., 10.5 mi WSW Leakesville, 27 May 1987, P.K. Lago, (UM); 7.5 mi S State Line, 16 Jun 1987, P.K. Lago, (UM). HARRISON CO., 7 mi E Saucier, 18 Jun 1987, P.K. Lago, (UM); Biloxi, 1 Aug 1964, Taylor. (BM) HINDS CO., Clinton, 7 June 1982, B.P. Stark, (BS); Forestry Station, 9 Jun 1987, B.P. Stark, (BS). JACKSON CO., 11 mi N Van Cleave, 5 Jun 1984, R. Brown *et al.*, (MEM). LAFAYETTE CO., Oxford, 1 Jul 1979, P.K. Lago, (UM) OKTIBBEHA CO., Sturgis, 3 Jun 1974, C. Bryson, (MEM). PERRY CO., 4 mi SW New Augusta, 22 May 1987, P.K. Lago, (UM); 4.5 mi WSW New Augusta, 24 May 1987, P.K. Lago, (UM); 5 mi WSW New Augusta, 24 May 1987, P.K. Lago, (UM). PONTOTOC CO., Camp Yocona, 8 Jun 1972, Bryson, (BM); Randolph, 5 Jul 1979, J. Goddard, (UM). T9S-R2E-SEC. 19, 12 Jun 1978, P.K. Lago, (UM). RANKIN CO., Cleary, 1 Jun 1987, W.C. Northern, (UM). WEBSTER CO., 2 mi S Cumberland, 31 May 1971, C. Bryson, (MEM); Cumberland, 25 May 1972, C. Bryson, (MEM). SPECIMENS EXAMINED: 27.



Figs. 1 and 2. *Neuroptynx appendiculatus*. 1, lateral aspect of head. 2, dorsal aspect of wings.

Ululodes macleayanus (Guilding, 1825: 140)

(Figs. 3, 4)

Ululodes macleayanus is widely distributed in Mississippi, but collection records are lacking for the central Yazoo Delta, the extreme north-east, and most southwestern counties. "Black light traps" and "artificial light" are the only specific collection notes we have for this species.

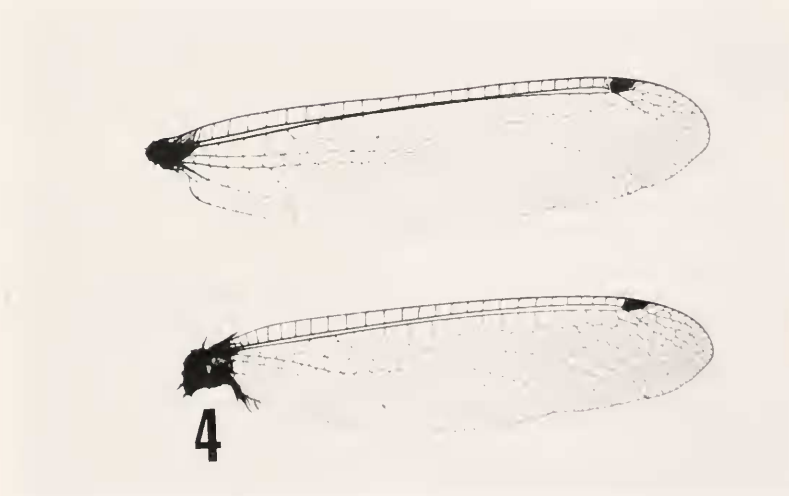
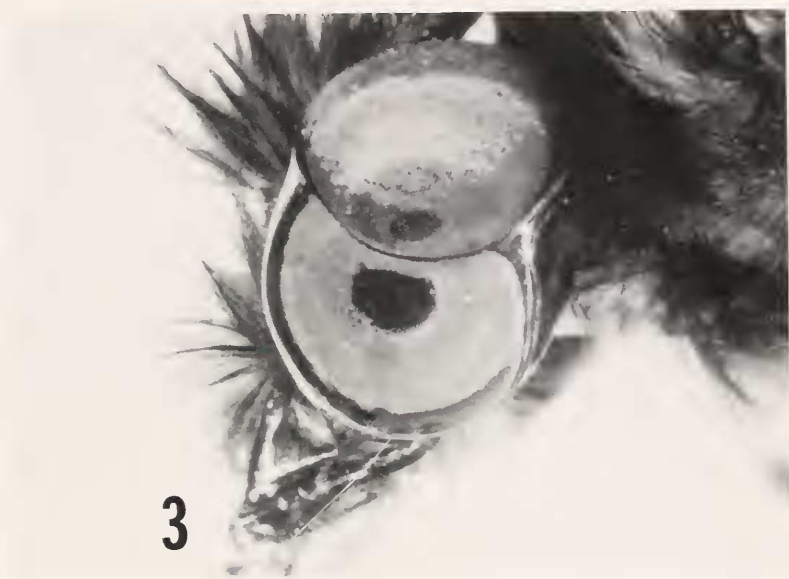
Mississippi Records

ADAMS CO., Natchez, 11 Aug 1982, A.E. Zuccaro, Jr., (UM). BOLIVAR CO., Great River Road State Park, 19 Jun 1986, S. Testa (UM); 2 mi W Rosedale, 23 Aug 1980, 19 Jun 1981, P.K. Lago, (UM). CLAIBORNE CO., Sand Creek, 4 Jun 1981, A. Kirk, (BS). FORREST CO., 6 mi WSW McLaurin, 23 Jun 1987, P.K. Lago, (UM); HANCOCK CO., Pt. Clear Island, 24 Jun 1986, 12 Aug 1986, P.K. Lago, (UM). HARRISON CO., Pass Christian, 10 Jul 1982, B. Stark, (BS) Biloxi, 30 May 1964, B. Mather, (USNM). HINDS CO., Jackson, 28 Jul 1978, B.P. Stark, (BS); Ridgeland, 12 Jul 1984, G. Burrows, (MEM). JACKSON CO., Orange Grove, 10 Jul 1934, M. Griffith, (UK). LAFAYETTE CO., Oxford, 20 Jun 1977, A.E. Zuccaro, Jr., (UM), Oxford, 13 Jul 1977, 29 Jun 1980, 9 Jun 1987, P.K. Lago, (UM); Oxford, 1 Jun 1986, M.C. Beiser, (UM); Oxford, 21 Jun 1976, G. Lee, (UM). LAMAR CO. Lumberton, 5 Jul 1927, G.F. Arnold, (MEM). MARSHALL CO., T3S-R3W-SEC. 13, 20 Jul 1978, S. Hurdle, (UM). NEWTON CO., Roberts, 20 Jul 1969, 10 Aug 1969, W.I. Luke, (MEM) OKTIBBEHA CO., Starkville, 6 Jun 1982, 9 Jun 1982, W.H. Cross, black light (MEM); Starkville, 9 Jul 1979, P. Ramey, artificial light (MEM); Agr. College, 2 Jun 192(?) (no collector given), (MEM); Agr. College, 12 Jun 1921, I.F. Hyde, (MEM); Agr. College, 22 Jun 1921, G.D. Ratliff, (MEM); Agr. College, 11 Jul 1921, J.A. Welch, (MEM); Agr. College, Jun 1922, J.L. Murff, (MEM); Agr. College, (no date), (no collector given), (MEM); (No locality given), 1 Jul 1969, 1 Jun 1964, 13 Jun 1964, 4 May 1967, 20 Jun 1964, 4 Jun 1965, J.R. McCoy, (MEM). PANOLA CO., 4 mi ENE Como, Jul 1979, W.P. Scott, lt. (MEM); Sardis Lake Reservoir, 2 Aug 1972, J. Spain, (UM). SIMPSON CO., Mill Creek @ Hwy 472, 2 Jun 1986, B. Stark, (BS). WARREN CO., Bovina, 2 Jun 1976, B. Mather, (BS); Vicksburg, 13 Jul 1987, 16 Jul 1972, 2 Jul 1987, 21 Aug 1984, (BM); 21 Jun 1977, (BS); 9 Jul 1987, B. Mather, (BM) WASHINGTON CO., Wayside, 20 Jul 1966, B. Mather, (USNM). (County not determined), Stoney, 20 Sep 1954, (no collector given), (PU). SPECIMENS examined: 66.

Ululodes quadrimaculatus (Say, 1824: 305)

(Figs. 5, 6)

The distribution of Mississippi records for this species is very similar to that of *U. macleayanus*. Individuals of *U. quadrimaculatus* are commonly attracted to black light. We have also collected them during daylight hours from resting places. The resting position is head-down, abdomen protruded at about a 45 degree angle, on barren twigs. The insects may be mistaken for short twigs by the casual observer. In this position, the wings are held against the substrate.



Figs. 3 and 4. *Ululodes macleayanus*. 3, lateral aspect of head showing transverse ocular sulcus. 4, dorsal aspect of wings.



Figs. 5 and 6. Wings of *Ululodes quadrimaculatus*. 5, male. 6, female.

Mississippi Records

FORREST CO., Hattiesburg, 11 Jun 1917, J.W. Champlin, (MEM); P.B. Johnson State Park, 23 Jun 1986, P.K. Lago, (UM). HARRISON CO., Biloxi, 1 Aug 1964, Taylor, (BM); Biloxi, 4 Jul 1964, Taylor, (BM); Gulfport, 1 Jul 1926, K. Harmon, (MEM). HOLMES CO., Holmes Co. State Park, 1 Jul 1986, S. Testa, (UM). JACKSON CO., Gulf. Isl. Natl. Sea., 3-6 Jun 1984, R. Brown *et al.* (MEM). LAFAYETTE CO., 5 mi E Oxford, 27 Jul 1977, 6 Aug 1977, D.F. Stanford, (UM); 11 mi NW Oxford, 25 Jul 1978, H.L. Schuster, (UM); 6 mi ENE Oxford, 15 Jul 1986, S. Testa, (UM); 7 mi S Oxford, 13 Jul 1987, P.K. Lago, (UM); Oxford, 15 Jun 1976, G. Lee, (UM); Oxford, 13 Jul 1977, D.F. Stanford, (UM); Oxford, 27 Aug 1986, S. Testa, (UM); Oxford, 27 Jul 1984, 30 Aug 1976, 10 Jun 1977, 11 Jul 1978, 15 Aug 1978, 17 Aug 1978, 2 Jul 1980, 24 Jul 1981, 25 Jul 1978, 29 Jul 1979, 30 Jul 1978, 4 Aug 1980, 4 Jul 1978, 7 Aug 1981, P.K. Lago, (UM); U.M. Campus, 3 Aug 1978, S. Hurdle, (UM); T7S-R4W-SEC. 24, 17 Jul 1978, D.F. Stanford, (UM), (no locality given), Jun-Jul, 1967, S.R. Foster, (UM). LAMAR CO., 3.5 mi NNE Baxterville, 27 Jun 1986, S. Testa, (UM). MARION CO., Lake Columbia, 27 Jun 1986, S. Testa, (UM). NEWTON CO., Roberts, 20 Jul 1969, W.I. Luke, (MEM). OKTIBBEHA CO., 10 mi W Starkville, 1 Jul 1986, 4 Jul 1985, 9 Jul 1986, G. Head, (MEM); 6 mi SW Starkville, 12 Sep 1984, R.L. & B.B. Brown, (MEM); Additon, 26 Aug 1968, Mrs. Crumpton, (MEM); Dorman Lake, 29 Aug 1981, W.H. Cross, (MEM); Starkville, 2 Jun 1985, R.L. Brown, (MEM); Starkville, 20 Jun 1985, G. Head, (MEM); Starkville, 24 Jul 1981, 25 Jul 1981, 8 Aug 1981, W.H. Cross, black light, (MEM); Starkville, Oct-Sep 1985, R. Altig, (MEM). STONE CO., Perkinston, 26 Jun 1986, P.K. Lago, (UM); UM Forestlands, 12 Jun 1987, P.K. Lago, (UM); UM Forestlands, 26 June 1986, S. Testa, (UM). WARREN CO., Vicksburg, 10 Aug 1983, B. Mather, (BM). WASHINGTON CO., Stoneville, 7 Jul 1986, P.O. Leary, (MEM); Stoneville Exp. Sta., 1-7 Aug 1986, R.E. Furr, JR., (MEM). YALOBUSHA CO., 5 mi SW Coffeeville, 17 Jul 1986, P.K. Lago, (UM). SPECIMENS EXAMINED: 68.

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